

ADVC500

Advanced Digital Video Converter

User Manual

canopus

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Warranty

Your ADV-500 options are covered by a limited warranty when you register your Canopus product. This warranty is for a period of three years from the date of purchase from Canopus or an authorized Canopus agent. This warranty applies only to the original purchaser of the Canopus product and is not transferable, Canopus Co., Ltd. warrants that for this period the product will be in good working order. Should our product fail to be in good working order, Canopus will, at its option, repair or replace it at no additional charge, provided that the product has not been subjected to misuse, abuse or non-Canopus authorized alternations, modifications and/or repair. Proof of purchase is required to validate your warranty.

Canopus is not responsible for any lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use, this product. This includes damage to property and, to the extent permitted by law, damages for personal injury. This warranty is in lieu of all other warranties of merchantability and fitness for a particular purpose.

Cautions

Please observe the following cautions when using this product. If you have any questions regarding the method of usage, the descriptions herein, or any other concerns, please contact Canopus Technical Support.

DANGER

The following conditions indicate the potential for serious bodily injury or loss of life.

Health precautions

In rare cases, flashing lights or stimulation from the bright light of a computer display may trigger temporary epileptic seizures or loss of consciousness. It is believed that even individuals whom have never experienced such symptoms may be susceptible. If you or close relatives have experienced any of these symptoms, consult a doctor before using this product.

Do not use in environments requiring a high degree of reliability and safety

This product is not to be used in medical devices or life support systems. The characteristics of this product are not suited for use with such systems.

Protect against static electricity

An electrostatic discharge may damage components of this product. Do not directly touch any of the connectors or component surfaces.

Static electricity can be generated on clothing and on people. Before handling the product, discharge static electricity from your body by touching a grounded metal surface.

Do not disassemble

Do not remove the cover or modify the ADVC-500. Fire, electric shock or malfunction may result. For internal inspection or repair, please contact your system integrator or Canopus directly.

Do not operate at other than the specified voltage

Do not operate at other than the specified voltages of AC 100-240V. Operation at other than the rated voltage may result in fire or malfunction.

Do not operate with other than the specified power supply

Do not operate with other than the specified AC adapter, or with a car power supply. Such operation may result in fire or malfunction.

Handle the AC adapter cord carefully

Do not place heavy objects on top of the cord, or place it near hot objects. Doing so may damage the cord and result in fire, electrical shock, or malfunction. Altering the cord, or excessively bending or pulling the cord may result in fire or electrical shock. If the cord is damaged, please contact your local retail outlet or Canopus directly.

CAUTION

The following conditions indicate the potential for bodily harm, damage to hardware or loss of data.

Do not pull AC adapter cord when disconnecting from electrical outlet

When disconnecting the AC adapter cord, pull on the plug, not the cord itself. Pulling on the cord can damage the cord and may result in fire or electric shock.

Do not touch AC adapter with wet hands

Do not disconnect or plug in the AC adapter when your hands are wet. Contact with water may result in electric shock, fire or damage.

Do not setup in areas subject to heat

Do not setup in an area exposed to direct sunlight or near a heating apparatus. The heat can accumulate, causing burns, fire or damage. Also, the unit may become deformed or change color.

Only setup using the prescribed method

Do not setup in a manner other than prescribed. Do not use while wrapped in cloth or plastic. Heat can accumulate, causing burns, fire or damage.

If product will not be used for an extended period

If this product will not be used for an extended period of time, disconnect the AC adapter from the electrical outlet.

FCC Notice

This equipment has been tested and found to comply with the limits for the class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed, and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Notice

WARNING

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Product Notes

1. Unauthorized copying of a portion or the entirety of this product is prohibited.
2. The description and specifications of this product are subject to future change without notice.
3. The description of this product has been prepared to be as complete as possible. If the reader is aware of any questionable points, errors or omissions, please contact Canopus.
4. The company assumes no liability for the results of practical application, regardless of item (3) above.
5. Regardless of whether negligence occurs during usage, the company assumes no liability, even if there is a claim for extraordinary, incidental or derivative loss, including the loss of profits, that arise during practical application of this product.
6. The analysis, reverse engineering, recompiling and disassembling of the software, hardware or manuals that accompany this product, and all other related products including miscellaneous supplemental items, are prohibited.
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About the Documentation

This document is the ADVC-500 User Manual.

Information not listed in this document may be listed elsewhere.

In cases where there is a difference between a description in this documents and an actual operation method, the actual operation method takes precedence.

This document is written for users capable of performing basic PC operations. If there is no special description of an operation, perform that operation in the same manner as a general PC operation.

This document refers to Microsoft's Windows 2000 operating system as Windows 2000.

This document refers to Microsoft's Windows XP operating system as Windows XP.

To simplify the descriptions, the actual product may differ from the illustrations and screenshots.

About This Manual

The information contained in this manual covers the installation and specific functionality of the ADVC-500.

Chapter 1 — Introduction

Provides information about contacting us and using this manual.

Chapter 2 — Installation

Step-by-step on installing the ADVC-500 into your computer system.

Chapter 3 — Basic Instructions

Describes the part names and functions and other basics of the ADVC-500.

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Chapter 1

Introduction

Thank you for purchasing the Canopus ADVC-500 Advanced DV Converter. Before you start using your system, please read this manual and follow the installation instructions. This will ensure that you have a trouble-free setup. If you have any questions please call, fax, mail or email us at your local Canopus office or distributor.

1.1 Package Contents

The below items are included in your ADVC-500 package:

- 1 x ADVC-500 unit
- 1 x AC Adapter
- 1 x AC Cable
- 2 x BNC/RCA Conversion connectors
- 1 x DV Cable (6-pin to 4-pin)
- 2 x Bracket for rack mounting
- 4 x Mounting screw
- 1 x CD-ROM
- 1 x Manual
ADVC-500 User's Manual

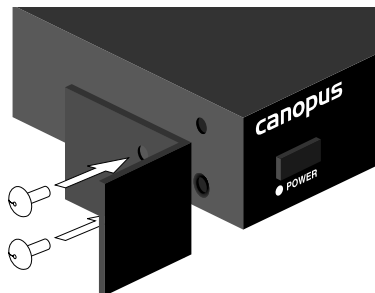
1.2 System Requirements

Your computer system should meet the following requirements to operate the software supplied with the product. This software is incompatible with Macintosh computers.

- Pentium III CPU or greater
- 128 MB RAM
- 4 MB free hard disk space
- OHCI card (IEEE1394 Interface card)
 - * Cannot be used via Canopus DV editing system
- CD-ROM drive for installation
- Microsoft Windows 2000 Professional+SP3, Microsoft Windows XP Home Edition+SP1, Microsoft Windows XP Professional+SP1

NOTE: When mounting the ADVC-500 on a rack

1. When mounting the ADVC-500 unit on a rack, remove the four rubber legs from the bottom of the unit using a Phillips screwdriver.
2. Remove screws from both sides of the ADVC-500 unit.
3. Attach the rack-mount bracket to the ADVC-500 unit with included screws.



Chapter 2

Installation

This chapter explains the procedure for installing the software “Picture Controller” for your PC.

- Installation

2.1 Installation

Installing Canopus Picture Controller for your PC

Install the provided Canopus Picture Controller on your PC.

- * The Picture Controller can be installed regardless of whether the ADVC-500 is connected or not.

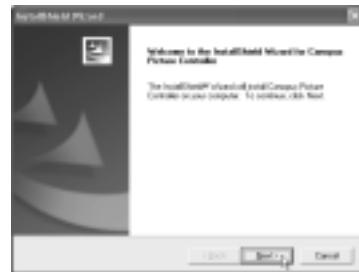
1. Place the “ADVC-500 Application CD” in the CD-ROM drive.

NOTE: Do not remove the “ADVC-500 Application CD” from the CD-ROM drive until the installation is completed.

2. The InstallShield® Wizard on the CD-ROM will start automatically.

- * If the InstallShield® Wizard on the CD-ROM does not start automatically, select [All Programs] ([Programs] when using Windows® 2000) from the [Start] menu, select [Accessories]-[Windows Explorer] to start the Windows Explorer, and then select and open the drive in which the CD-ROM is inserted.

3. Click [Next].



4. When the License Agreement is displayed, read the terms of the license agreement thoroughly, and click [Yes] only when you accept the agreement.

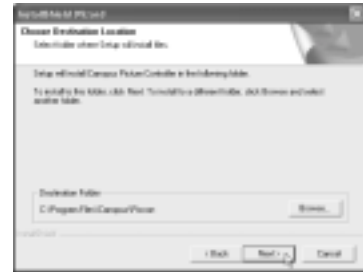
If you decide not to accept the license agreement, stop the installation process.

- * If you do not accept the license agreement, you will not be able to use this software.



5. Click [Next].

- ➔ To change the destination folder in which the software will be installed, click [Browse], and select the desired folder.



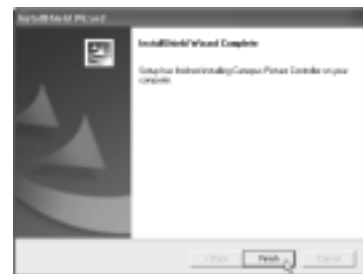
6. Select the appropriate option, and click [Next].

- ➔ Check the box next to the option you select.
- ➔ The Readme file (Release Note) contains additional information that is not provided in the manual. Make sure to read the information when installing the software.



7. Click [Finish].

- ➔ The installation of the Canopus Picture Controller is completed.



Chapter 3

Basic Instructions

This chapter explains the part names and functions and other basics of the ADV-C500.

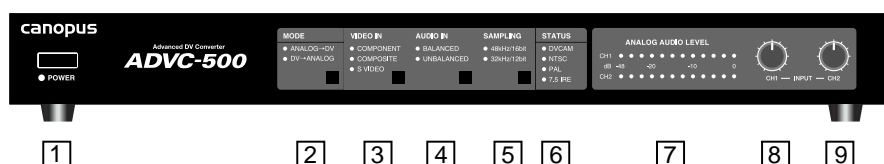
- Part names and functions
- Connecting devices
- Starting the application software
- Specifications

3.1 Part Names and Functions

ADVC-500 Front panel

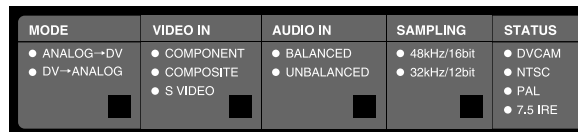
The front panel of the ADVC-500 unit has the following controllers and indicators.

Indicator area



- 1** POWER switch
Turns the power of the ADVC-500 unit on and off.
- 2** MODE indicator
Displays the currently selected operation mode.
- 3** VIDEO IN indicator
Displays the currently selected analog video input.
- 4** AUDIO IN indicator
Displays the currently selected analog audio input.
- 5** SAMPLING indicator
Displays the currently selected audio sampling frequency.
- 6** STATUS indicator
Displays the currently selected video standard mode. (Refer to the following page.)
- 7** ANALOG AUDIO LEVEL (Peak-level indicator)
Displays the peak level of the audio that is currently being input or output.
- 8** ANALOG AUDIO LEVEL (INPUT CH1)
Used for adjusting the level of audio input to CH1 in analog signal. Turn the volume controller clockwise to increase the input level.
- 9** ANALOG AUDIO LEVEL (INPUT CH2)
Used for adjusting the level of audio input to CH2 in analog signal. Turn the volume controller clockwise to increase the input level.

Switch area on the front panel



1 MODE switch

Used to switch on the operation mode of the DV CODEC. Pressing the switch will activate the Encode operation and Decode operation alternatively. "ANALOG → DV" LED illuminates under the Encode operation, and "DV → ANALOG" LED illuminates under the Decode operation.

Pressing down the MODE switch for 3 seconds or longer will output the color bars. To return to the normal mode, press the MODE switch again.

* Color bars output will be output only to ANALOG, not to DV.

* The color bars output using the MODE switch is simplified. Do not use the color bars as a reference.

2 VIDEO IN switch

Used to switch on the three video-input systems sequentially under the "ANALOG → DV" mode. Pressing the switch turns on the LED indicators sequentially in the order of "COMPONENT" → "COMPOSITE" → "S VIDEO"; the input source is switched on simultaneously. All LED indicators go off under the "DV → ANALOG" mode. (The switch is disabled under the "DV → ANALOG" mode.)

3 AUDIO IN switch

Used to switch on the two audio-input systems sequentially under the "ANALOG → DV" mode. Pressing the switch turns on the LED indicators alternatively between "BALANCED" and "UNBALANCED"; the input source is switched on simultaneously. Both LED indicators go off under the "DV → ANALOG" mode. (The switch is disabled under the "DV → ANALOG" mode.)

4 SAMPLING switch

Used to switch the audio sampling frequency of the DV that is output under the "ANALOG → DV" mode. Pressing the switch turns on the LED indicators "48kHz/16bit" and "32kHz/12bit" alternatively. Under the "DV → ANALOG" mode, the LED indicator illuminates based on the DV input stream information. (The switch is disabled under the DV input mode.)

Both LED indicators go off when the audio format of the DV that is currently input is other than "48kHz/16bit" and "32kHz/12bit".

5 STATUS indicator

Displays the currently selected video standard.

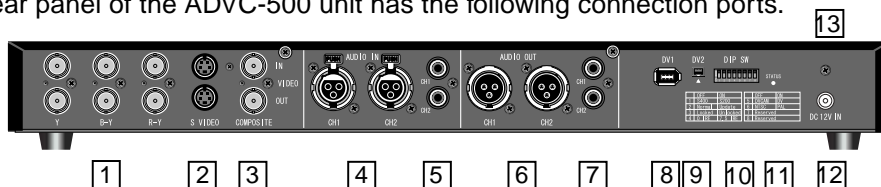
- Under the "ANALOG → DV" mode
Operation is executed based on the DIP switch setting. (Refer to page 11.)

- Under the "DV → ANALOG" mode
The DVCAM status indicator switches on depending on the data of the DV stream being input. Indicators other than the DVCAM status operate as follows, based on the DIP switch setting.

	Turns off	Turns on
DVCAM:	DV mode	DVCAM mode
NTSC:	PAL	NTSC
PAL:	NTSC	PAL
7.5 IRE:	0 IRE	7.5 IRE (Turns off upon PAL setting)

ADVC-500 Rear panel

The rear panel of the ADVC-500 unit has the following connection ports.



- 1** Component Video connection port
Input and output terminals for component video signal. The three terminals on the upper row are video input, and the three terminals on the lower row are video output.
- 2** S-Video connection port
Input and output terminals for S-video signal. The terminal on the upper row is video input, and the terminal on the lower row is video output.
- 3** COMPOSITE connection port
Input and output terminals for composite video signal. The terminal on the upper row is composite input, and the terminal on the lower row is composite output.
- 4** AUDIO IN (Balanced input)
Input terminals for balanced audio signal. The left terminal on the rear panel is CH1, and the right one is CH2.
- 5** AUDIO IN (Unbalanced input)
Input terminals for unbalanced audio signal. The terminal on the upper row is CH1, and one on the lower row is CH2.
- 6** AUDIO OUT (Balanced output)
Output terminals for balanced audio signal. The left terminal on the rear panel is CH1, and the right one is CH2.
- 7** AUDIO OUT (Unbalanced output)
Output terminals for unbalanced audio signal. The terminal on the upper row is CH1, and one on the lower row is CH2.
- 8** DV connection port (6-pin)
Connect this port with a DV device or a PC using a DV cable. (Bus power will not be supplied.)
- 9** DV connection port (4-pin)
Connect this port with a DV device or a PC using a DV cable.
- 10** DIP switches
The settings of the ADVC-500 can be configured here. (Refer to the following page.)
- 11** STATUS LED
Illuminates when a copyright-protect signal is detected, or an error condition occurs.
- 12** DC 12 V IN
Connect the provided AC adapter here.
- 13** GND terminal
Connect a ground wire to this terminal.

CAUTION 1: This unit will not work as an OHCI Hub with Canopus DV products.

CAUTION 2: To use this unit as a Hub with OHCI devices, the application also needs to support two or more devices.

DIP switch settings

The rear panel of the ADVC-500 unit has the following DIP switches. All DIP switches are factory-configured to the OFF position.

ON ←	No.	MODE	OFF		ON	
1	1	PHY SPEED	S400		S200	
2	2	Update Mode	Normal		Update	
3	3	Locked Audio Mode	Locked		Unlocked	
4	4	NTSC Setup Level	0 IRE		7.5 IRE	
5	5	DV/DVCAM	DVCAM		DV	
6	6	Video Format	NTSC		PAL	
7	7	Reserved				
8	8	Reserved				

SW1: PHY Speed

Designates the PHY speed.

OFF: S400

ON: S200

SW2: Update Mode

Used to update the internal software. (Set this switch to the off position for normal operations.)

OFF: Normal

ON: Update

SW3: Locked Audio Mode

Determines whether to use the Locked Audio mode. Enabled only when the DV mode is selected. (The switch is always set to the Locked Audio Mode with DVCAM.)

OFF: Locked mode

ON: Unlocked mode

SW4: NTSC Setup Level

Designates the black (setup) level. Enabled only when the video format (standard) is NTSC.

OFF: 0 IRE (Japan)

ON: 7.5 IRE (North America)

SW5: DV/DVCAM

Select DV or DVCAM.

OFF: DVCAM

ON: DV

SW6: Video Format

Designates the video signal format.

OFF: NTSC

ON: PAL

SW7: Reserved

Not used. (Set this switch to the off position for normal operations.)

SW8: Reserved

Not used. (Set this switch to the off position for normal operations.)

CAUTION: Make sure to turn off the power of the ADVC-500 unit before making any changes for DIP switch settings.

3.2 Connecting Devices

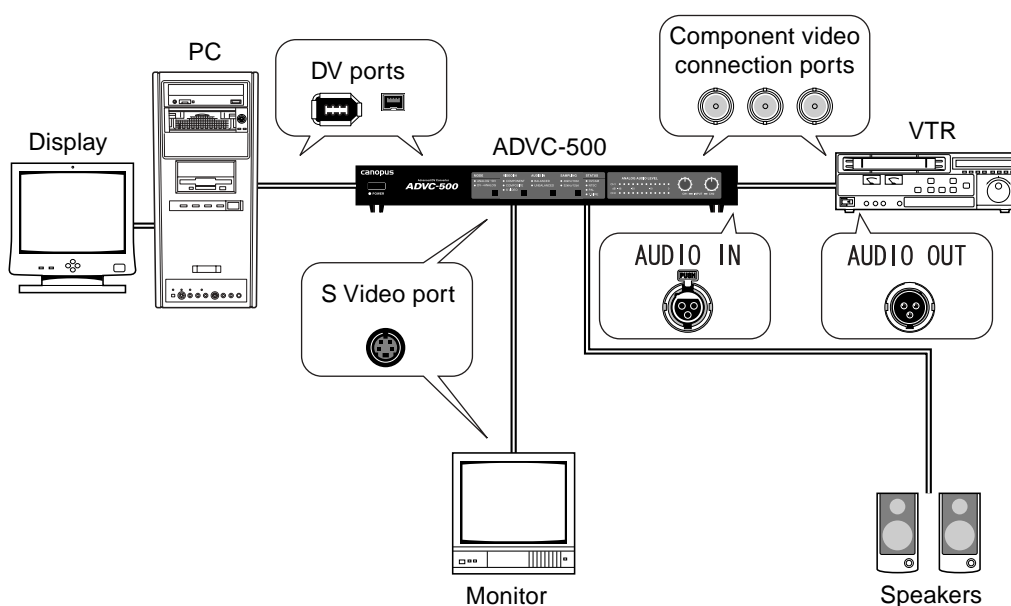
Connecting the ADVC-500 unit to your system

Connect the ADVC-500 unit to your system. The diagram below illustrates the typical connection of the ADVC-500.

* This device can be used either as a stand alone unit or with a PC.

Sample connection of a VTR featuring a component video terminal with a PC.

The ADVC converts component video signal and audio signal into DV data, or into analog signal, in order to record the data on tape.

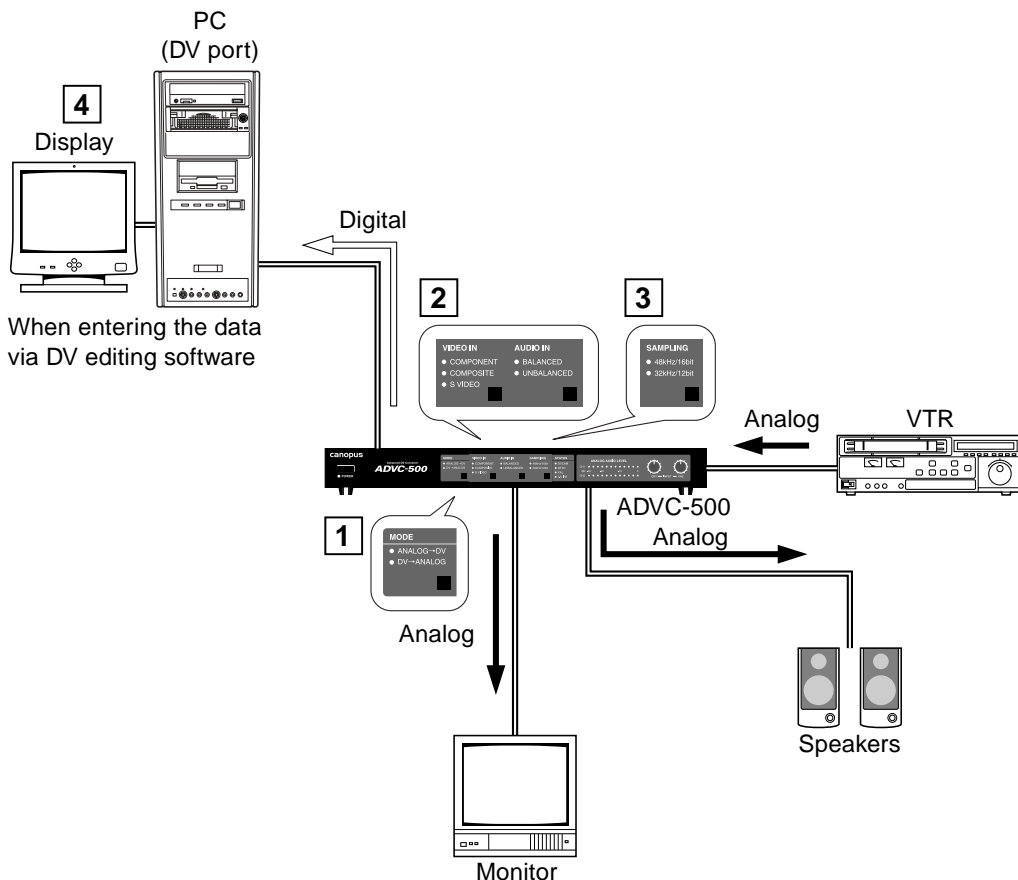


CAUTION: DV editing software is required to playback or capture AVI video files for use on a personal computer or to record the file data onto tape. In addition, the PC should be equipped with an IEEE-1394 port.

NOTE: When connecting a personal computer to the ADVC-500 unit, make sure that the personal computer's power is turned off.

Importing analog data to your PC

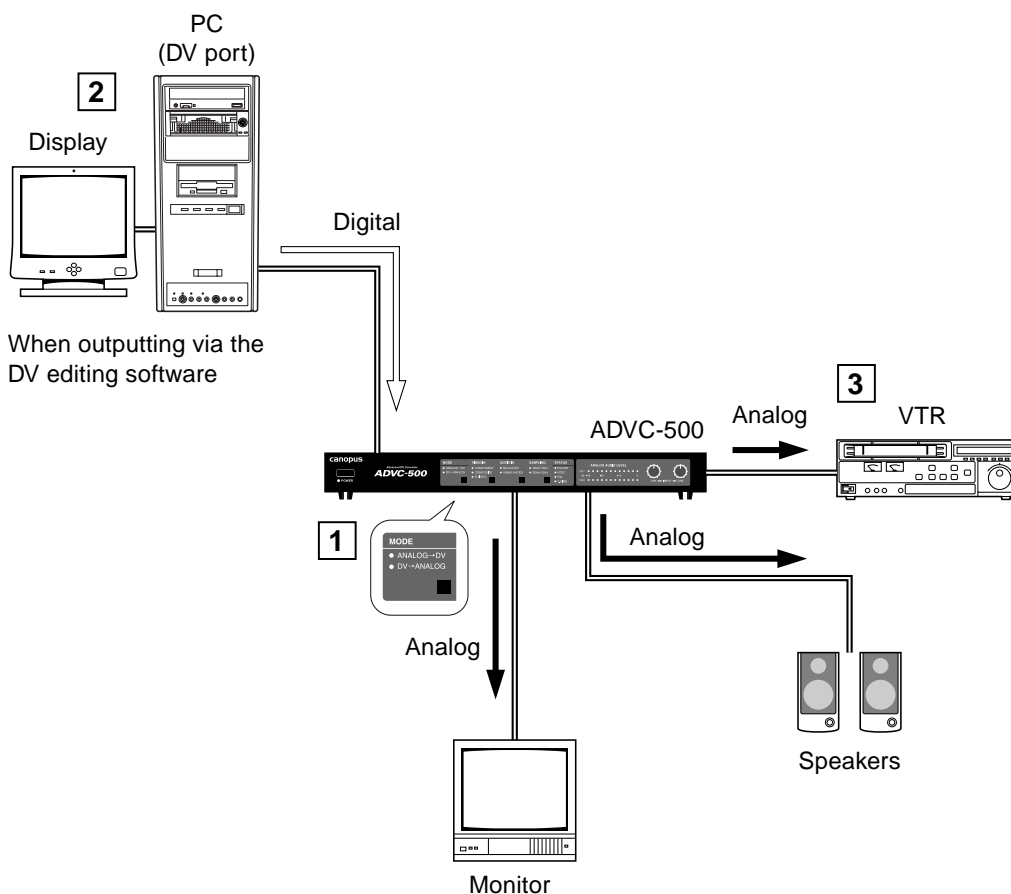
Import the material of the tape on VTR into a personal computer.



- 1 Press the [MODE] switch on the front panel of the ADV C-500 to switch the mode to the “ANALOG → DV” mode.
- 2 Press the [VIDEO IN] switch and [AUDIO IN] switch on the front panel of the ADV C-500 and select the destination.
 - * Select “COMPONENT”, “COMPOSITE”, or “S VIDEO” with the [VIDEO IN] switch. Select either “BALANCED” or “UNBALANCED” with the [AUDIO IN] switch.
- 3 Press the [SAMPLING] switch on the front panel of the ADV C, and select the frequency of the audio to be output.
 - * Select either “48kHz/16bit” or “32kHz/12bit” with the [SAMPLING] switch.
- 4 Capture the data by using DV editing software.
 - * For the operational procedure of the DV editing software, refer to the instruction manual provided with your DV editing software.

Recording PC-edited data onto a tape with VTR

Export the DV data on the personal computer into the VTR.



- 1 Press the [MODE] switch on the front panel of the ADVC-500 to switch the mode to the "DV → ANALOG" mode.
- 2 Use the DV editing software to output your data with analog signal.
 - * For the operational procedure of the DV editing software, refer to the instruction manual provided with your DV editing software.
- 3 Use the VTR to record the data on tape.

3.3 Starting the Application Software

Starting Canopus Picture Controller

Start up the Picture Controller that is provided with the ADV-C500.

1. Select the [Start] → [All Programs] ([Programs] when using Windows® 2000) → [Canopus Picture Controller] menus, and then select [Picture Controller].

2. Picture Controller starts up.

→ Switch tabs to display the following setting window on the screen:



Note: Retention values of video adjustment settings.

Picture Controller enables the following five types of video-quality adjustment on a personal computer via 1394I/F; Video Quality settings will remain effective after the power is turned off, or the ADV-C500 is disconnected from your PC.

1. Brightness adjustment (256 steps)
2. Contrast adjustment (256 steps)
3. Hue adjustment (256 steps)
4. Saturation adjustment (256 steps)
5. Sharpness adjustment (16 steps)

The video quality settings are stored independently for each input.

- Composite
- S-Video
- Component

However, note that the settings are shared with the following color formats. Change the format setting and adjust the video quality separately as necessary.

Default values of Video Quality parameters are designated individually for NTSC 0 IRE, NTSC 7.5 IRE, and PAL.

When power is turned on after color format setting of NTSC 0IRE, NTSC 7.5 IRE, or PAL is changed, the changed Video Quality parameter will be initialized to the default value.

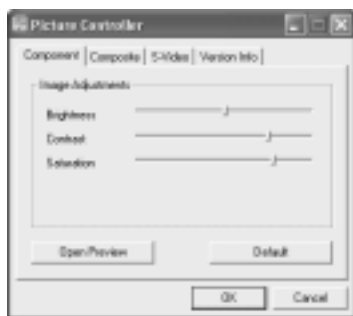
- NTSC (0 IRE)
- NTSC (7.5 IRE)
- PAL

Tabs of Picture Controller

Configure the settings for analog input. Picture Controller consists of the following four tabs.

[Component] tab

The video quality can be adjusted when inputting component signals. Brightness, Contrast, and Saturation can be adjusted on this tab.



[Open Preview]

Press this button to open the Preview window.

[Default]

Press this button to reset the settings to the default values.

[Composite] tab

The video quality can be adjusted when inputting composite signals. Brightness, Contrast, Saturation, Hue, and Sharpness can be adjusted on this tab.



[Open Preview]

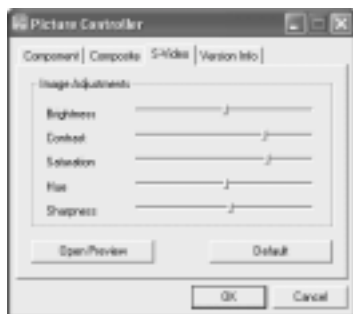
Press this button to open the Preview window.

[Default]

Press this button to reset the settings to the default values.

[S-Video] tab

The video quality can be adjusted when inputting S-Video signals. Brightness, Contrast, Saturation, Hue, and Sharpness can be adjusted on this tab.



[Open Preview]

Press this button to open the Preview window.

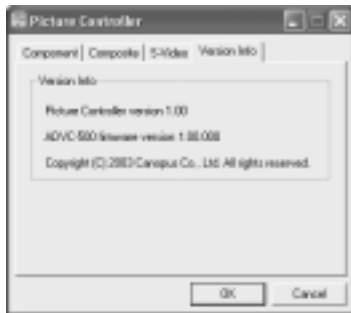
[Return to default]

Press this button to reset the settings to the default values.

CAUTION: Do not press switches on the front panel of the ADVC-500 while adjusting the video quality using the Picture Controller. Also, do not disconnect the cable or turn the power off.

[Version Info] tab

Displays the version information of Canopus Picture Controller.



3.4 Specifications

General	Power source	External power-supply jack rating: 12 VDC, 2 A
	Current consumption	+12 V, 1.9 A
	Operating temperature	+10 to 35°C
	Operating humidity	40 to 80% (No condensation)
	Storage temperature	-20 to +60°C
	Storage humidity	20 to 80% (No condensation)
	Outside dimension	Ready for EIA-compliant 19' rack-mounting 430mm (W) x 170.8mm (D) x 44mm (H) (Projections are excluded.)
Digital video	Format	DV/DVCAM
	Input/Output terminal	4-pin IEEE1394 interface x 1
		6-pin IEEE1394 interface x 1
	Video size	720 x 480 (NTSC) 720 x 576 (PAL)
Digital audio	Sampling rate	32kHz/12bit 2-channel
		48kHz/16bit 2-channel
	Locked Audio	ON/OFF
Analog video	Input terminal	Composite (BNC) x 1
		S-Video (Mini-DIN 4-pin) x 1
		Component (BNC x 3) x 1
	Output terminal	Composite (BNC) x 1
		S-Video (Mini-DIN 4-pin) x 1
		Component (BNC x 3) x 1
	Video size	720 x 480 (NTSC) 720 x 576 (PAL)
Analog audio	Input (Balanced)	XLR-3-31 (Female. No.1: GND, No. 2: HOT, No. 3: COLD)
	Input (Unbalanced)	RCA pin jack
	Output (Balanced)	XLR-3-32 (Male. No.1: GND, No. 2: HOT, No. 3: COLD)
	Output (Unbalanced)	RCA pin jack
	The load of the balanced audio supports high impedance (several 10k Ω) and low impedance (600 Ω).	

Front panel			Power switch		
			MODE: ANALOG to DV/DV to ANALOG		
			VIDEO IN: Component/Composite/S-Video		
			AUDIO IN: Balanced/Unbalanced		
			SAMPLING: 48kHz/16bit/32kHz/12bit		
			Volume controller for audio input level x 2		
			Audio level meter		
			DVCAM/NTSC/PAL/7.5IRE indicators		
Rear panel connection ports	Input/Output terminals		4-pin IEEE1394 x 1		
			6-pin IEEE1394 x 1		
	Analog video input terminal		Composite (BNC) x 1		
			S-Video (Mini-DIN 4-pin) x 1		
			Component (BNC x 3) x 1		
	Analog video output terminal		Composite (BNC) x 1		
			S-Video (Mini-DIN 4-pin) x 1		
			Component (BNC x 3) x 1		
	Analog audio	Input (Balanced)		XLR-3-31 (Female. No.1: GND, No. 2: HOT, No. 3 COLD)	
		Input (Unbalanced)		RCA pin jack	
		Output (Balanced)		XLR-3-32 (Male. No.1: GND, No. 2: HOT, No. 3 COLD)	
		Output (Unbalanced)		RCA pin jack	
	DIP switch				
	STATUS LED				
